

**BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking on the  
Commission's Proposed Policies and Programs  
Governing Low-Income Assistance Programs.

Rulemaking 01-08-028  
(Filed August 23, 2001)

**ADMINISTRATIVE LAW JUDGE'S RULING  
ADOPTING IMPLEMENTATION ROADMAP FOR EVALUATION,  
MEASUREMENT AND VERIFICATION**

By Decision (D.) 05-01-055, the Commission directed Energy Division and California Energy Commission staff (collectively referred to as Joint Staff) to jointly prepare an implementation roadmap for evaluation, measurement and verification (EM&V) and Research and Analysis for the 2006 program planning cycle (roadmap) by March 28, 2005 for my consideration.<sup>1</sup> By ruling dated April 4, 2005, I circulated a revised draft of Energy Division's proposal for further comment. I received comments from Pacific Gas and Electric Company, Southern California Edison Company and (jointly) from the Office of Ratepayer Advocates and Natural Resources Defense Council. I have considered these further comments in consultation with Joint Staff, and adopt the EM&V roadmap attached to this ruling (Attachment A).

I note that the Commission is currently considering a draft decision on updated policy rules and threshold EM&V policy decisions that is on the

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<sup>1</sup> D.05-01-055, Ordering Paragraph 14.

April 21, 2005 agenda. Among other things, that decision clarifies the process and timeframe for developing the remaining EM&V submittals that will be required to develop detailed EM&V plans and budgets for the 2006-2008 program cycle. It also provides guidance on what should be contained in those submittals. Therefore, the attached roadmap may need to be further refined and clarified based on the Commission's final decision on those issues.

More generally, per Ordering Paragraph 14 of D.05-01-055, the Commission has recognized that I may need to "provide additional clarification and direction on EM&V and Research and Analysis administrative issues, or make modifications to the roadmap during the program planning cycle." I intend to do so as the planning process proceeds via oral or written communications with Joint Staff, and, as appropriate, by ALJ ruling.

**IT IS RULED** that the EM&V roadmap attached to this ruling is adopted until further notice.

Dated April 20, 2005, at San Francisco, California.

/s/ MEG GOTTSTEIN by LTC

Meg Gottstein  
Administrative Law Judge

ATTACHMENT A

**Revised Road Map and Schedule for Evaluation Planning  
For Proposed 2006-2008 Energy Efficiency Programs  
To Be Administered by the  
California Investor Owned Utilities**

Developed by the CEC and Energy Division Evaluation Staff  
Final Revision  
April 14, 2005

**Revised Road Map**  
**Evaluation Planning for the 2006-2008 Energy Efficiency Programs**  
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## Section 1

### Description of the Revised Road Map Evaluation Planning Process

#### ***A. Introduction and Summary***

In response to comments received from PG&E, SCE, SDG&E , NRDC, ORA, WEM, Hank Ryan, Bill Knox and other EM&V consultants and direction from the Administrative Law Judge, the joint staff EM&V team has developed new schedules for six critical phases of the overall EM&V planning process. Table 1 provides the schedule for each of these phases and final product for each of the phases are listed below.

**Table 1**  
**Overview of the Evaluation Planning Process**

<b>EM&amp;V Phase</b>	<b>Beginning and Ending Dates</b>	<b>Final Product</b>	<b>Action Required and Expected Date</b>
1. Transition Planning	May 2 <sup>nd</sup> to June 20 <sup>th</sup>	Final transition report - Agreements on roles and responsibilities of PA's and EMV staff to manage a variety of EM&V projects	No formal Commission action required.
2. Performance Basis Protocols	May 2 <sup>nd</sup> to July 15 <sup>th</sup>	Adopted Protocols before October final program plan filing	ALJ Ruling by September 1
3. "How to" or Quality control Protocols	May 15 to October 15 <sup>th</sup>	Adopted protocols before RFP's are released in late fall	ALJ ruling by December 15 <sup>th</sup>
4. EM&V Planning/Budgeting for Program or Sector Specific studies	April 15 to December 15 <sup>th</sup>	Detailed evaluation budget available by November 1 <sup>st</sup> for Commission action	Commission decision before Jan 1, 2006
5. EM&V planning for overarching Policy	June 15 <sup>th</sup> to December 15	Detailed list of evaluations and	Commission decision on

<b>EM&amp;V Phase</b>	<b>Beginning and Ending Dates</b>	<b>Final Product</b>	<b>Action Required and Expected Date</b>
support and Quality control projects		budgets available by November 1 <sup>st</sup> for Commission action	budgets by Jan 1, 2006
6. EM&V Project Management Planning	May 12 to January 5, 2006	Workable plan to select contractors and manage evaluation contracts in 2006 with sufficient staff	No commission or ALJ action required

***B. Process for Adopting Staff EM&V Protocol and Project Management Proposals***

This schedule assumes that the Commission can rapidly make decisions on proposed protocols and detailed work scope and roles for state and utility EM&V staff in order to support their objectives of approving evaluations plans by October 15<sup>th</sup>. To support this goal, Staff recommends that the evaluation planning process use an expedited approval process for the protocols described above because of the rapid turnaround time between approval of protocols and the need to develop specific evaluation plans consistent with them. We recommend that the assigned ALJ, in consultation with the Assigned Commissioner's office and Energy Division/CEC staff team, be specifically delegate the authority to approve the transition report, proposed performance basis protocols (consistent with the Commission's guidance in the decision) and the "how to" protocols, after issuing them for comment (via ruling) by all interested parties. The Commission should retain authority to approve, modify or deny the detailed EM&V budget requests to support the proposed evaluation plans that will be consistent with the newly adopted protocols.

***C. Summary of Major Changes Made to the Evaluation Planning Schedule***

The major changes made in response to comments to our original evaluation schedule are summarized below:

1. Moving Phase 4: Planning and budgeting for program specific studies back in time to allow more time for the program planning process to produce final programs
2. Moving Phases 2 and 3: Development of New Protocols up in time so that performance basis protocols will be available before the final program plans are filed in October of 2005.
3. Adding more time to develop Quality control protocols
4. Moving Phase 5: Planning for overarching policy support and quality control projects back to June 15<sup>th</sup> to November 15<sup>th</sup> to ensure the contents of all programs are known before making final decisions on scope and research design for WM&V projects.

A more detailed description of what tasks will be accomplished in each phase and specific schedule dates is presented in the last five sections.

***D. Phase 1: Transition Planning***

The purpose of this phase of the planning process is to gather information on current and ongoing EM&V projects, identify new program strategies or plans that may require new evaluation approaches and clarify project management and support roles for the state EM&V staff and utility portfolio managers. We plan to have meetings with the current EM&V administrators, the utilities, to discuss which types of evaluation projects should continue to be funded in 2006 through 2008 and how they would approach evaluation planning for new program ideas, such as emerging technologies, on bill financing, upstream natural gas programs, etc. In addition we will discuss how to interface the responsibility to verify measure installations with the portfolio administrators plans for program tracking.

In addition we plan to translate the generic guidance from the administrative structure on institutional roles, into a set of assignments for managing specific types of evaluation studies. Based

on our review of previous work we will need to discuss how to handle EM&V studies that theoretically should be co-managed because the research questions or topic fall under the responsibility of both state staff and utility program administrators. Appendix B, Proposed Roles for Evaluation, Monitoring and Assessment activities should be the starting point for these discussions.

Our proposed resolution and or agreements with the portfolio administrators of these topics will be presented as a transition report to the presiding ALJ in mid June. We expect her to review the report to ensure its consistent with the ruling but only take action if the report includes recommendations contrary to the decision.

Below we present the key milestones in this process from project start to end in Figure 1.

**Figure 1 - Transition Planning Schedule**

<b>Transition Planning-</b>									
<b>Start to end-May 2 to June 20th</b>									
Utilities should provide ED staff with a status list of ongoing and planned EM&V projects for 2004/5 programs, and opinions on which projects should be continued or followed on by new research			27-Apr						
Meeting to Discuss data provided above and roles of ED/utility staff and project management by evaluation program type- access to billing data for ED evaluation firms				2-May					
Meeting to Discuss alternatives to managing numerous program specific evaluation projects- market sector focus for multiple programs?				3-May					
Meeting to discuss draft integrated EM&V cycle draft from ED/CEC staff				3-May					
Draft or Final agreement on roles of ED/CEC/PA's and billing data handling for evaluations sent to ALJ					15-May				
Draft Transition report outlining final evaluation roles for state staff and PA's and proposed process for jointly managing crossover studies and assuring payment of invoices, customer contacts during evaluations, etc						27-May			
Final transition report to CPUC								20-Jun	

***E. Phase 2: Performance Basis Protocol Development***

**What data/ parameters (energy savings per unit, load factors, participation levels, incremental costs) must be updated for each program and by when?**





topic such as appropriate sampling techniques to increase accuracy and reduce bias, methods to estimate load impacts, process evaluations, studies to verify assumptions about baseline energy usage in customer facilities, and studies to estimate or assess market effects from single or multiple programs. These protocols will be relevant to both state EM&V staff managing evaluation projects and for third party implementers or administrators that may opt to perform their own process evaluations.

Figure 3 describe the schedule for developing these protocols below. The goal is to develop the protocols over the summer and have them adopted by November 1, 2005 for use in evaluation studies beginning in January 1, 2006.

**Figure 3: Development of Quality Control/How to protocols**

Protocol Development- How to Protocols for Administrators and Evaluation Project managers											
Start to end dates- 5/16 to 10/15/05	April	May	June	July	August	September	October				
ED Contractor will Draft protocols ( in rows below) based on the Guidance in the California Evaluation Framework											
Draft of Sampling/ Research Design Protocols		16-May									
Draft of Measurement and Verification		16-May									
Draft of Process Evaluations			3-Jun								
Draft of Impact Evaluations			3-Jun								
Draft of Market Effects Protocols			3-Jun								
Meetings to Discuss Program Reporting Requirements with Portfolio administrators				5-Jul							
Draft of Evaluation Reporting requirements protocol				15-Jul							
Public meeting/workshop to discuss draft protocols from above					10-Aug						
ED/CEC staff Submit final protocols for comment/adoption						10-Sep					
ALJ adoption after comments										15-Oct	

**G. Phase 4: Evaluation Planning/budgeting for Program or Market Specific Studies**

The purpose of this phase is to develop specific plans for evaluations of the programs proposed for 2006-2008. The first priority is to understand the information needs of the portfolio administrators. Specifically what are the key uncertainties underlying the estimates of savings to meet the overall goals: is it program participation, savings per unit, operating hours for specific equipment, etc? The second priority is to gather data to calculate the performance basis for each program or groups of programs in a sector on a triennial basis. The third priority is to discuss the program administrator's plans for

conducting both program tracking and process evaluations for each or selected major programs. This information will guide future ED/CEC plans for verifying installations and tracking program progress in real time.

After achieving an understanding the program administrator plans, joint staff will develop plans for verifying installation of measures and quality control of those installations and include those in its final load impact plans and budget. The actual plans and budgets for these projects will be published on August 10<sup>th</sup> as part of Phase 5, Developing Policy Oversight and Quality Control EM&V work scope and budgets

At the meetings with the program administrators, we also plan to discuss how the evaluation studies should be phased over the three year life of each program. Options include: Perform three separate evaluations, one each year, for the same program but different topics or plan to hire one contractor for a three year period to gather different types of data for different types of evaluations for the same program.

Finally this phase must also include the development of load impact and or performance basis evaluations for third party programs selected during the competitive process summer of 2005. We plan to begin development of those plans on September 1<sup>st</sup> ( after the winning projects are selected) and issue a draft of these evaluation plans on October 15<sup>th</sup>. This is followed by a workshop to gather comments and issuance of a final set of plans on November 1, 2005.

The schedule for producing draft study plans and project budgets for these studies is shown in Figure 4.

**Figure 4**  
**Program Specific Evaluation Planning**

Evaluation Planning/budgeting for Program and Market Specific Studies											
Start to end dates= 4/15/05 to 12/15/05				May	June	July	August	September			
Utilities (PA's) submit Preliminary list of new program designs or concepts that will need to be evaluated in 2006, and or broad program savings goals	4/18										
PA's Submit first round of Program Plans in June					1-Jun						
Meetings with PA's to discuss the priority information needs and/or key uncertainties for each program strategy/plan from above					June 6-june 12th						
ED/CEC produces Draft evaluation plans for each major program type by IOU						15-Jul					
Public Workshop to gather comments						26-Jul					
Meetings to discuss draft plans with PA's						week of July 26-30					
PA's submit proposed program tracking and process evaluation projects and budgets for their program plans							15-Aug				
Public workshop together comments on PA draft plans							30-Aug				
ED/CEC team submit draft plans and budget to evaluate third party programs for written comments by Oct 10 and or get comments at workshop on 10/12									1-Oct	12-Oct	
PA's submit revised program plans including third party programs and budgets for process evaluations and market tracking studies									1-Oct		
Final Evaluation Plans submitted- PA and EMV team											1-Nov
Final evaluation plans adopted											15-Dec

***H. Phase 5: Evaluation Planning - Developing Policy Oversight and Quality Control EM&V Plans and Budgets***

The purpose of this phase of the planning process is to develop specific projects and budgets to support the Commissions policy oversight and quality control objectives. This process will produce budgets that will be merged with the budgets and descriptions of program-specific evaluation projects to produce an overall budget request for EM&V expenditures. Budgets for any planned financial audits, verification of measure installations updates to “statewide” parameter estimates such as measure useful lives or incremental measure costs will also be included. Finally budgets for data collection and analysis projects to support future program planning, including RASS, CEUS and DEER, and the next round of energy efficiency potential studies will be produced in this process.

The start and end of this process was delayed in response to comments from the public. The process is scheduled to start on June 15<sup>th</sup> and end on December 15<sup>th</sup>. This extended time period will be necessary in order to review the proposed program plans, identify key uncertainties in the estimated energy savings and performance basis calculated for the final set of program plans approved in the fall and develop studies to help resolve these uncertainties and verify program accomplishments.

The tentative schedule for this process is outlined in Figure 5, Schedule for Developing Policy Oversight and Quality Control Projects.

**Figure 5**  
**Schedule for Developing Policy Oversight and Quality Control Projects.**

Evaluation Planning- Developing Policy Oversight and Quality Control project workscopes and budgets															
Start to end dates=6/15 to 12/15															
ED publishes draft schedule for major policy oversight projects- DEER, efficiency potential studies, Portfolio or market sector studies, RASS, CEUS, appliance sales tracking															
ED publishes budget estimates for above studies															
ED submits draft plan for verification of measure installations and quality control of installations															
Public meeting to discuss both schedules and budget estimates															
Revised schedule and budgets submitted to ALJ as part of final evaluation plan with budgets for program specific studies- remit any leftover funds to PA's															
Commission decision on EM&V study budgets to support policy oversight and quality control															

***I. Phase 6: Developing a Strategy for Staffing and Managing Evaluation Studies for 2006-2008***

The purpose of this final phase is to secure the staff or contract resources necessary to manage all the EM&V projects discussed above. The management from the Energy Commission and the California Public Utility Commission will meet to review their options over the next three months as defined in the schedule below.

**Figure 6**  
**Process to Develop a Strategy to Staff and Manage the EM&V functions**

Developing a Strategy for Staffing and Managing Evaluation Studies for 2006-2008														
Start to end: May 12 to January 5, 2006														
Discussion of Process to Select Evaluation contractors and acquire more contract management staff at the agency level														
Meeting to consider alternative approaches to staff the contract management tasks, Possible drafting of an MOU between CEC and CPUC														
Meeting (s) to review tentative list of EMV projects and proposed contracting process														
Release RFP's on a phased basis														
Release RFP's on a phased basis														
Manage the Projects- 2006 thru 2008														

### ***J. Summary***

We appreciate the time that all of the stakeholders have spent to review the proposed schedule and provide comments. State Staff has attempted to respond to all of the constructive comments received on its draft road map by issuing a revised schedule. All of the dates proposed above should be considered tentative until confirmed by the Administrative Law Judge or the assigned Commissioner in a ruling.

**Appendix A**  
**Statewide EM&V Expenditure in Relation to Program Expenditures**  
**1994 - 2003**

	Evaluation, Measurement and Verification (EMV) funding/ total program						
	1992	1993	1994	1995	1996	1997	1998
EM&V expenditures *	34,853	31,941	31,176	21,743	23,334	28,208	27,602
Total EE program funding	202,370	226,276	246,972	163,878	171,636	144,946	190,528
EMV/total EE spending ( % )	17.2%	14.1%	12.6%	13.3%	13.6%	19.5%	14.5%
EMV/grand total ( % )	11.2%	9.8%	9.1%	9.3%	10.8%	14.7%	11.8%
Above figures include expenditures from PG&E, SCE and SDG&E for electricity efficiency programs							
* EMV expenditures were classified as MA&E ( Measurement, Assessment and Evaluation) until after							



**Appendix B**  
**Proposed Roles for Evaluation & Monitoring**  
**and Assessment Activities**  
**(Definitions for key terms follow the table.)**

<b>State (CPUC or CEC)</b>	<b>Portfolio Managers</b>	<b>Program Implementers</b>
Audits of Portfolio Administrators or Program Managers – Financial and Managerial	Audits of Program Implementers expenses and or achievements	Process Evaluation
Site visits to verify measure installations	Quality Control Inspections/Site Visits	Media Tracking - How many customers aware of message?
Program Impact Evaluation – energy and peak	Process Evaluations	Customer satisfaction surveys?
Portfolio Evaluation *		
Measurement of Baseline conditions - base efficiency levels, operating hours, etc	Market Assessment* - assess impacts of multiple programs or market structure and rules	
Verification of Compliance with Protocols	Portfolio Evaluation* - Mix studies- see below.	
Market Assessment*-- savings potential and or goal attainment	Market Tracking of equipment efficiency sales*	
Overarching Studies to Support Commission Policy Goals		
Energy Savings Potential Studies * <sup>2</sup>	Effectiveness of Training/Audits/Media in reaching customers	
Retention or Persistence studies	Best Practices for Programs	
Develop and Maintain EM&V Protocols	Improvements in Protocols??	
Maintain DEER database and regularly update	Portfolio evaluation-What portion of portfolio funds should be devoted to training, media, rebates, or web push to maximize portfolio value or energy savings	

<sup>2</sup> Studies that could be co-managed by both State and Portfolio administrator staff or have one party be lead but the other involved in drafting of scope of work and review of deliverables.

State (CPUC or CEC)	Portfolio Managers	Program Implementers
Global Assessments of Net to Gross Ratios for program groups		
Market Assessment*- To what extent are the savings produced by a portfolio of programs likely to be sustainable or permanent		
Other Projects as Necessary to Support the Commission's Efforts to Enhance the Quality of the Portfolio, or the Underlying Data (e.g., EEGA)		

### Definitions:

**Evaluation** – Evaluations have two major goals

- (1) supporting improvements in the design of market interventions (e.g. programs) to make them more effective and
  - (2) assessing the impacts of current market interventions on a variety of indicators of interest (on adoptions of measures, changes annual and peak energy use, market actor behavior, market structure, etc)
- Below we identify specific types of evaluations:

- a. **Program Impact Evaluation** – Estimates of the NET change in annual energy and peak period use resulting from a program or group of programs designed to promote the efficient use of energy in a particular customer segment.
- b. **Portfolio Evaluation** – Review and assessment of the sum of all program load impacts (energy and non energy) on overall energy use at the sector or service territory level and comparison of these impacts to previously defined goals and objectives set for the entire portfolio of programs

**Process Evaluation** – Review and assessment of a program, or group of programs, used to improve the design and efficacy of the examined program(s) both while the program is operating and when similar future programs are designed.

**Measurement** – Refers to the use of customer or onsite surveys, data loggers and other recording devices to determine actual operating conditions at a specific set of facilities participating in programs. Includes hours of operation, capacities, energy use for specific equipment and operating conditions for buildings or facilities participating in energy efficiency programs.

**Verification** – Substantiation that the measures promoted by an efficiency program were installed properly and have the potential to save the amount of energy claimed. More specifically, confirming that the baseline conditions were accurately defined and the proper equipment/systems were installed, were performing to specification, and had the potential to generate the predicted savings.

**Overarching Studies** – Studies that examine the effect of a large grouping of program on a feature or characteristic of interest, such as the ability of program to reach a particular market segment or effect changes in particular market or distribution or sales channels.

**Market Assessment** – Assessment of the effect of programs on specific features of a market; including but not limited to stocking patterns, sales levels, attitudes and behaviors of market actors and or customers with respect to specific products.

**(END OF ATTACHMENT A)**

**CERTIFICATE OF SERVICE**

I certify that I have this day served the attached Administrative Law Judge's Ruling Adopting Implementation Roadmap for Evaluation, Measurement and Verification on all parties of record in this proceeding or their attorneys of record by electronic mail to those who provided electronic mail addresses, and by U.S. mail to those who did not provide e-mail addresses.

Dated April 20, 2005, at San Francisco, California.

/s/ ELIZABETH LEWIS  
Elizabeth Lewis

**N O T I C E**

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[Gottstein Attachment A](#)